

Python Tutorial

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Today, Python is one of the most popular programming languages. Although it is a general-purpose language, it is used in various areas of applications such as Machine Learning, Artificial Intelligence, web development, IoT, and more.

This Python tutorial has been written for the beginners to help them understand the basic to advanced concepts of Python Programming Language. After completing this tutorial, you will find yourself at a great level of expertise in Python, from where you can take yourself to the next levels to become a world class Software Engineer.

This Python tutorial is based on the latest Python 3.11.2 version.

What is Python?

Python is a very popular general-purpose interpreted, interactive, object-oriented, and high-level programming language. Python is dynamically-typed and garbage-collected programming language. It was created by Guido van Rossum during 1985- 1990. Like Perl, Python source code is also available under the GNU General Public License (GPL).

Python supports multiple programming paradigms, including Procedural, Object Oriented and Functional programming language. Python design philosophy emphasizes code readability with the use of significant indentation.

This tutorial gives a complete understanding of Python programming language starting from basic concepts to advanced concepts. This tutorial will take you through simple and practical approaches while learning Python Programming language.

Python Jobs

Today, Python is very high in demand and all the major companies are looking for great Python Programmers to develop websites, software components, and applications or to work with Data Science, AI, and ML technologies. When we are developing this tutorial in 2022, there is a high shortage of Python Programmers where as market demands more number of Python Programmers due to it's application in Machine Learning, Artificial Intelligence etc.

Today a Python Programmer with 3-5 years of experience is asking for around \$150,000 annual package and this is the most demanding programming language in America. Though it can vary depending on the location of the Job. It's impossible to list all of the companies using Python, to name a few big companies are:

- Google
- Intel
- NASA
- PayPal
- Facebook
- IBM
- Amazon
- Netflix
- Pinterest
- Uber
- Many more...

So, you could be the next potential employee for any of these major companies. We have developed a great learning material for you to learn Python Programming which will help you prepare for the technical interviews and certification exams based on Python. So, start learning Python using this simple and effective tutorial from anywhere and anytime absolutely at your pace.

Why to Learn Python?


Python is consistently rated as one of the world's most popular programming languages. Python is fairly easy to learn, so if you are starting to learn any programming language then Python could be your great choice. Today various Schools, Colleges and Universities are teaching Python as their primary programming language. There are many other good reasons which makes Python as the top choice of any programmer:

- Python is Open Source which means its available free of cost.
- Python is simple and so easy to learn
- Python is versatile and can be used to create many different things.
- Python has powerful development libraries include AI, ML etc.
- Python is much in demand and ensures high salary

Python is a MUST for students and working professionals to become a great Software Engineer specially when they are working in Web Development Domain. I will list down some of the key advantages of learning Python:

- **Python is Interpreted** – Python is processed at runtime by the interpreter. You do not need to compile your program before executing it. This is similar to PERL and PHP.
- **Python is Interactive** – You can actually sit at a Python prompt and interact with the interpreter directly to write your programs.
- **Python is Object-Oriented** – Python supports Object-Oriented style or technique of programming that encapsulates code within objects.
- **Python is a Beginner's Language** – Python is a great language for the beginner-level programmers and supports the development of a wide range of applications from simple text processing to WWW browsers to games.

Python Online Compiler/Interpreter

We have provided **Python Online Compiler/Interpreter** which helps you to **Edit** and **Execute** the code directly from your browser. Try to click the icon  to run the following Python code to print conventional "Hello, World!".

*Below code box allows you to change the value of the code. Try to change the value inside **print()** and run it again to verify the result.*

```
# This is my first Python program.  
# This will print 'Hello, World!' as the output  
  
print ("Hello, World!");
```

Careers with Python

If you know Python nicely, then you have a great career ahead. Here are just a few of the career options where Python is a key skill:

- Game developer
- Web designer
- Python developer
- Full-stack developer
- Machine learning engineer
- Data scientist
- Data analyst
- Data engineer
- DevOps engineer
- Software engineer
- Many more other roles

Characteristics of Python

Following are important characteristics of **Python Programming** –

- It supports functional and structured programming methods as well as OOP.
- It can be used as a scripting language or can be compiled to byte-code for building large applications.
- It provides very high-level dynamic data types and supports dynamic type checking.
- It supports automatic garbage collection.
- It can be easily integrated with C, C++, COM, ActiveX, CORBA, and Java.

Applications of Python

The latest release of Python is 3.x. As mentioned before, Python is one of the most widely used language over the web. I'm going to list few of them here:

- **Easy-to-learn** – Python has few keywords, simple structure, and a clearly defined syntax. This allows the student to pick up the language quickly.
- **Easy-to-read** – Python code is more clearly defined and visible to the eyes.
- **Easy-to-maintain** – Python's source code is fairly easy-to-maintain.
- **A broad standard library** – Python's bulk of the library is very portable and cross-platform compatible on UNIX, Windows, and Macintosh.
- **Interactive Mode** – Python has support for an interactive mode which allows interactive testing and debugging of snippets of code.
- **Portable** – Python can run on a wide variety of hardware platforms and has the same interface on all platforms.
- **Extendable** – You can add low-level modules to the Python interpreter. These modules enable programmers to add to or customize their tools to be more efficient.
- **Databases** – Python provides interfaces to all major commercial databases.
- **GUI Programming** – Python supports GUI applications that can be created and ported to many system calls, libraries and windows systems, such as Windows MFC, Macintosh, and the X Window system of Unix.
- **Scalable** – Python provides a better structure and support for large programs than shell scripting.

Target Audience

This tutorial has been prepared for the beginners to help them understand the basics to advanced concepts of Python programming language. After completing this tutorial, you will find yourself at a great level of expertise in Python programming, from where you can take yourself to the next levels.

Prerequisites

Although it is a beginners tutorial, we assume that the readers have a reasonable exposure to any programming environment and knowledge of basic concepts such as variables, commands, syntax, etc.

Frequently Asked Questions about Python

There are some very Frequently Asked Questions(FAQ) about Python, this section tries to answer them briefly.

Why is Python easy for beginners?

Python was designed to be concise and easy to read and it provides English like syntax all of which makes it more easy to understand to the first-time coders than many other languages. Python is also easy to learn because it is an interpreted programming language.

What are the benefits of Python Programming Language?

(a) Python is free and open source (b) Python is community driven and has expert leadership (c) Python is fast and high-performance. (d) Python is High-level language and easy to learn. (e) Python provides lot of third-party modules.(f) Portable across Operating systems (g) Libraries for Machine Learning, Data Science and other modern technologies.

How much time will it take to learn Python?

Learning style, and dedication to the amount of time you can spend each day affect a lot. However, on average, it takes around 6 to 12 months to learn Python programming.

Why Python is a so popular Programming Language?

Python is a popular language for web and software development because you can create complex, multi-protocol applications while maintaining concise, readable syntax.

What are the advantages of Python over Java?

Although Java is faster, Python is more versatile, easier to read, and has a simpler syntax. As Python is an interpreted language, the code directly runs in the execution environment.

How do I start learning Python?

Here are the summarized list of tips which you can follow to start learning Python.

- First and the most important is to make your mind to learn Python.
- Install Python interpreter on your computer system.
- Follow our tutorial step by step starting from very beginning.

- Read more articles, watch online courses or buy a book on Python to enhance your knowledge in Python.
- Try to develop a small software using Python and other libraries like Panda, NumPy etc.

Which is the best place to learn Python?



You can use our simple and the best Python tutorial to learn Python. We have removed all the unnecessary complexity while teaching you Python concepts. You can start learning it now [Start Learning Python](#).

Python Questions & Answers

You can explore a set of Python Questions and Answers at [Python Questions & Answers](#)